

MARINE RESEARCH ACT OF 1988

JUNE 29, 1988.—Ordered to be printed

Mr. BURDICK, from the Committee on Environment and Public Works, submitted the following

REPORT

[To accompany S. 2068]

The Committee on Environment and Public Works, to which was referred the bill (S. 2068) to amend the Marine Protection, Research, and Sanctuaries Act to protect marine and coastal waters through establishment of regional marine research programs, having considered the same, reports favorably thereon with an amendment to the title and recommends that the bill as amended do pass.

I. GENERAL STATEMENT

The marine and coastal waters of the United States are a natural resource of tremendous value and importance. There is growing evidence, however, that coastal waters face a range of environmental problems.

The Marine Research Act (S. 2068) is intended to protect our Nation's marine and coastal waters through increased scientific research and assessment. The bill provides general authority to establish ten regional marine research programs. The basic objective of the marine research programs will be to support and coordinate marine research at the regional level. Improved marine research will help develop the capability to identify and prevent threats to the marine environment before they grow to be unmanageable and costly problems.

II. OVERVIEW—MARINE ENVIRONMENTAL QUALITY

There is growing public awareness and concern for environmental problems in coastal waters. Recent news reports have highlighted beach closings in New Jersey, fish kills in Long Island Sound,

sewage and other pollution of Boston Harbor, a large "dead zone" in the Gulf of Mexico, decline in oysters in Chesapeake Bay, increased frequency of red tides, closings of shellfish areas, high levels of toxic contamination in fish, and the death of hundreds of dolphins in the mid-Atlantic.

Basic demographic trends are likely to support continued high levels of public interest and concern for the quality of coastal waters. The U.S. Census Bureau estimates that population in coastal counties grew from about 44 million in 1950 to 75 million in 1980, an increase of 69%.

Continued growth is projected for many coastal areas. Population density in coastal counties is currently about five times that in other counties. While the recreational and other values of the coast attract population growth, increased population can contribute to the contamination and related environmental problems of coastal waters.

Continued increases of environmental problems in coastal waters may lead to significant economic and social impacts. The combined value of commercial and recreational fisheries is about \$12 billion. Nationwide, over 70% of the commercial fish and shellfish depend on estuarine and near-coastal waters and landings of estuarine dependent species have declined over the past 20 years.

Last year, the OTA issued a major report titled "Wastes in the Marine Environment" which concluded that the overall health of our estuaries and coastal waters is "declining or threatened".

The OTA report identifies three major sources of pollution to the marine environment. Some 2,000 point sources discharge wastewater to the marine environment. About two-thirds of these discharges are industrial. The remaining discharges are from sewage treatment plants. Nonpoint pollution, caused by runoff from urban areas, farms, and construction sites, also contributes to the pollution of marine waters. Studies indicate that nonpoint sources are the primary cause of pollution in about half the estuaries with reported problems. Another source of pollution to marine waters cited by the OTA is dumping of sewage sludge and disposal of dredged material.

The OTA report identifies several impacts of pollution on water and sediment quality. Eutrophication is identified as the "most conspicuous and widespread" impact of pollutants on the marine environment. Eutrophication is caused by nutrient enrichment and can lead to blooms of photosynthetic organisms causing "red tide" and related effects. Under extreme circumstances, eutrophic conditions can lead to severe oxygen depletion called hypoxia and massive fish kills. Depletion of oxygen is a major problem in waters off the southern coast of Louisiana, the Chesapeake Bay, and the New York Bight.

The presence of pollutants in the water column is also identified as a serious problem. Control of fecal coliform bacteria and other pathogens has improved in some areas as a result of sewage treatment. But, "these water quality threats are expected to increase in some areas over the next decade." The OTA also found that "contamination of waters with metals and organic chemicals * * * is common".

The OTA identifies contamination of sediments as a serious problem on a site-specific basis and reports that this problem is generally more prevalent in the northeast. Problem areas include Buzzards Bay, Commencement Bay in Puget Sound, and the Southern California Bight. Sediment may be contaminated by metals, organic chemicals (e.g. PCBs, PAHs) and pathogens.

Contamination of the marine environment has a wide range of effects on marine organisms and humans. The OTA report identifies impacts of pollution on birds and mammals, finfish and shellfish, aquatic vegetation, and benthic organisms.

About 40% of all shellfishing areas were restricted in 1985. Although there is no clear national trend, this data "indicates that bacterial contamination is a significant problem nationwide." There is only limited evidence of finfish contamination. Reported problems, however, come from urban areas where there are concentrations of metals and organic chemicals.

In reviewing the impacts of contaminants on humans, the OTA report concludes that the most serious impacts result from human pathogens. The report states:

increased sewage treatment has reduced the outbreak of serious diseases attributable to direct contact with polluted water * * * but * * * bathing in sewage impacted waters is responsible for relatively high rates of gastrointestinal illness in the United States.

The report also states that the health effects of organic chemicals and metals are not well documented but that "the potential for such exposure and effects clearly exists * * *"

The OTA report provides a summary and assessment of the various laws relating to protection of marine and estuarine waters, including the Clean Water Act and the Marine Protection, Research and Sanctuaries Act. The report states:

* * * even if total compliance with today's regulations is achieved, existing programs will not be sufficient to * * * maintain or improve the health of all estuaries and coastal waters. In the absence of additional measures to protect our marine waters, the next few decades will witness new or continued degradation in many estuaries and coastal waters around the country.

Recent studies by the National Ocean and Atmospheric Administration (NOAA) support the findings of the OTA. Last Spring, NOAA published results of a national program to monitor toxic chemicals at 50 coastal and estuarine sites from Maine to Alaska. While the report represents only one year of data, it provides some early indications of the magnitude of coastal contamination problems. The report states:

Initial results show a complex, varied picture of environmental quality around the Nation's coast. A number of sites revealed relatively high levels of toxic contaminants in both bottom sediments and bottom dwelling fish. For example, sediment concentrations of toxic trace metals, aromatic hydrocarbons, DDT's, PCBs, and sewage derived material from northeastern Atlantic coast sites in Boston

Harbor, Salem Harbor, and Raritan Bay are among the highest values measured nationally.

The majority of sites nationwide, however, show relatively low concentrations of many contaminants. For example, levels of DDT in sediments at 59% of sites were very low. Sediment and fish from the southern Atlantic and the Gulf Coast were relatively less contaminated than those from other sites.

III. COMMITTEE HEARINGS ON MARINE ENVIRONMENTAL CONDITIONS

The Environmental Protection Subcommittee held several hearings over the past year to review environmental conditions of marine waters and to consider legislation to expand and strengthen marine research.

In September of last year the Subcommittee held a hearing in Portland, Maine to learn about the environmental conditions in the Gulf of Maine. The general conclusion of the hearing was that the Gulf of Maine is still very clean and does not now face the serious pollution problems present in other parts of the country. There also was agreement, however, that prevention of problems will require a first-rate science and monitoring program.

Witnesses at that hearing, including research scientists, representatives of the fishing industry, and environmentalists, identified a need for expanded and strengthened marine research, looking at the entire ecosystem of the Gulf of Maine. Witnesses advocated that research be managed at the regional level and be planned and conducted by local research institutions. They pointed to a need for reliable and sustained Federal assistance to supplement existing funding sources.

In late April of this year, the Subcommittee on Environmental Protection held two hearings on marine environmental problems. The first hearing, on April 20, addressed the seriousness and extent of marine pollution problems. The second hearing, on April 28, addressed the Marine Research Act (S. 2068) introduced by Senators Mitchell and Chafee.

A central topic of both hearings was the need to develop a strong marine research program. The OTA report, which was presented at the first hearing, suggests a range of actions to reverse the decline in coastal and marine water quality, including expanding and strengthening research of the marine environment. The report states:

Monitoring, research, and enforcement are currently inadequate, and funding levels for these activities are being reduced in some instances.

Dr. Donald Boesch of the Louisiana Marine Consortium, testifying at the first hearing, stated:

Reversing the trend of deteriorating coastal environmental quality will require a much improved understanding of environmental processes and the effects of changing conditions on ecosystem productivity and integrity.

Mr. Ken Coons of the New England Fisheries Development Foundation stated:

In gathering information for this testimony, I have been struck by the lack of knowledge regarding estuarine and marine pollution * * *

Without some legislative initiative, the general lack of information about the marine environment can be expected to remain a problem. The National Ocean Pollution Planning Board reports that Federal funding for marine pollution research and monitoring by the full range of Federal agencies declined from \$145.9 million in 1982 to \$101.7 million in 1988.

In addition to concern for expanding and better directing research efforts, witnesses at the April 20 hearing supported focusing research on the various multi-state, regional marine ecosystems around the country. The OTA report concluded:

More research needs to be conducted on changes over relatively large scales—for long periods of time and for entire ecological communities.

Dr. Sarah Taylor, representing the Coastal States Organization, stated:

In light of the fact that many coastal degradation issues are regional, regional solutions will be required.

Mr. Clifton Curtis, Executive Director of the Oceanic Society, stated:

* * * Research that is designed to meet local- or regional-specific needs promises to be the most effective * * *

Mr. Ken Coons of the New England Fisheries Development Foundation stated:

A coordinated regional approach to focus existing research capabilities on estuarine and marine pollution problems is clearly needed.

There was general support for the marine research legislation at the hearing addressing the bill on April 28th.

Mr. Kenneth Curtis, former Governor of the State of Maine and now Director of the Maine Maritime Academy, stated that regional research programs offer:

the only realistic vehicle to develop an overall long-range coordinated research plan * * * the regional approach will add to efficiency and effectiveness * * *.

Dr. James Kennett, Director of the Marine Sciences Institute at the University of California at Santa Barbara stressed the value of the regional research program in supporting both interdisciplinary research and basic research activities.

Mr. Charles Fox, representing the Environmental Policy Institute and a number of other environmental groups, stated:

* * * we believe that the proposed legislation would complement and substantially strengthen existing coastal research and monitoring programs * * *

Mr. Ron Dearborn, representing the Sea Grant Association, agreed that there is a "need for more effective regional planning, coordination, data collection/dissemination and public reporting".

He indicated that the Sea Grant program could contribute to this effort and should be more specifically built into the legislation.

Representatives of the Administration, including the EPA and NOAA, stated opposition to the legislation. Generally, they indicated that the program would overlap with existing authorities of their agencies and that the program was, therefore, unnecessary.

IV. THE MARINE RESEARCH ACT

The "Marine Research Act of 1988" (S. 2068) amends the Marine Protection, Research and Sanctuaries Act to authorize ten regional marine research centers or programs around the country.

Sponsors of the legislation include Senators Mitchell, Chafee, Bentsen, Johnston, Inouye, Moynihan, Sanford, Cohen, Lautenberg, Bradley, D'Amato, Matsunaga, Warner, Sarbanes, Mikulski, Graham, Cranston, and Breaux.

Regional research programs are intended to provide a regional focus for planning, coordinating, and conducting marine scientific research. Programs will be made up of existing marine research institutions in each region, including universities, State agencies, and private laboratories and will be managed by a governing board and executive director.

Each regional program is to develop a three-year research plan which sets the goals and priorities for research and monitoring in the marine and coastal waters of the region. Regional research plans will address projects ranging from basic oceanographic research to more specific, applied research activities.

The regional programs will be eligible for support grants of \$3 million per year. The bulk of this funding, at least \$2.5 million, will be used directly by research organizations to carry out the research and related activities identified in the three year research plan. Programs may use up to \$500,000 for activities including development of plans, sponsoring technical seminars, and publication of reports and studies.

The fishing community and other interested parties will participate in the development of plans through a formal Research Advisory Group.

The bill also provides authority for the regional programs to conduct baseline monitoring and assessment of marine environmental quality. Programs are to submit general reports to the State governors and the public on trends and conditions in the region.

The bill identifies ten marine regions around the country. The regions represent relatively distinct marine ecosystems and are based on biological and geographic divisions suggested by Federal agencies (see attached map).

The Federal government would play a limited oversight role through a research oversight board made up of interested Federal agencies.

The bill provides for a total authorization of \$33 million. This figure includes \$3 million for each region except the tropical region, which is eligible for \$1.5 million and the Gulf of Mexico Region which is eligible for \$5 million, and \$1 million to support the activities of the Federal board.

Several key changes were adopted during the mark-up process.

The role of the Sea Grant Program in the regional marine research program is expanded and strengthened in several ways.

Provisions related to research plans are clarified to include assessment and monitoring as well as research projects in the plan and to shift development of specific projects from the plan to the annual grant application process.

Provisions related to research and monitoring grants are expanded to include national peer review of specific projects and criteria for selection of specific projects at the regional level.

Provisions related to the Federal oversight board are revised to change the chair from EPA to NOAA, to add several agencies, and to drop regional program directors as members.

The reported bill refers to a Marine Research Trust Fund. The Marine Research Trust Fund is to be provided for in legislation to be introduced shortly and would be available to support the regional marine research provided for in this legislation.

The bill, as reported by the Committee, has several general goals and objectives.

First, this bill is intended to strengthen our marine research program, rather than add to or overlap with our existing regulatory programs. By improving our research program and building our knowledge of the marine environment, we will be taking a significant step toward protecting this resource and preventing the development of major, costly pollution problems.

Second, this legislation should be viewed in the context of the broader marine research program. While there is growing evidence of threats to the environmental quality of marine resources, overall funding for marine research has declined by about one third since 1982. Responding to marine environmental problems will require sufficient research funding to assure that presently authorized programs operate effectively. In addition, keeping pace with growing threats to the marine environment involves expanding and building on existing programs where appropriate.

Third, a major objective of this legislation is improved planning and coordination of marine research projects. Improved planning will help avoid duplication of research, focus limited funds on the most crucial projects, and generally improve the effectiveness and efficiency of marine research efforts.

Fourth, the bill calls for an increase in marine research at the regional level. Regional research institutions are an underutilized resource which have a great potential to make an increased contribution to marine research. Regional research programs can address issues common to an overall marine ecosystem. Regionally based research can contribute to development of badly needed baseline data on the marine environment which is beyond the reach of Federal agencies. Furthermore, regionally based research can be better tied into State and local agencies which can respond to pollution or related problems.

Finally, the research program proposed in this legislation will complement, not compete with, existing marine research programs. As noted previously, the bill specifically addresses coordination of this legislation with the Sea Grant Program. The Sea Grant State Program Directors will play a central role in development and

management of regional programs. In addition, existing facilities and resources, including Sea Grant resources, are to be used by regional programs to the fullest extent practicable.

This legislation also will complement projects under the National Estuaries Program at EPA, initiated last year under the Clean Water Act amendments. There are several key differences between the programs. The regional research programs address geographic areas which are much larger than the estuaries addressed in the estuaries program. The regional programs address research, while the estuaries program has a broader mandate for management and pollution control. And, the regional programs address all areas of the coast, while the estuaries program focuses on water bodies which are already facing severe pollution problems.

V. SECTION-BY-SECTION ANALYSIS

The Marine Research Act would be a new title IV of the Marine Protection, Research and Sanctuaries Act. The proposed amendment includes the following provisions.

Section 401

Outlines the findings of the Congress concerning the value of marine waters, the extent of environmental problems, and the need for improving and strengthening marine research to provide a scientific basis for responding to marine pollution problems.

Section 402

Identifies the purposes of the bill, including establishment of marine research programs on a regional basis, provides for long range research plans in these regions, and provides for reports on the conditions and environmental health of the regions and marine waters generally.

Section 403

Provides definitions of key terms.

Section 404

Provides authority for establishment of regional marine research programs and outlines the purposes, authorities, and areas of investigation of the programs.

This section also provides a process for organizing regional programs, including involvement of the full range of existing marine research institutions in a region, approval of Governors, and approval by a Federal oversight board.

This section also identifies ten marine research regions and indicates the boundaries of the regions.

Section 405

Provides for regional research plans including contents of plans, coordination with related activities, involvement of interested parties, and review by the Federal oversight board.

Section 406

Provides for grants to support operation of the research programs and implementation of the research plan, including national level peer review of project proposals, and purchase of essential equipment.

Section 407

Provides for monitoring and assessment activities and for public reports on trends and conditions in marine waters of each region on a three year basis.

Section 408

Provides for an oversight board made up of Federal agencies and chaired by NOAA and for a report to Congress on the health of the nation's coastal waters.

Section 409

Provides for a total authorization of \$33 million. Of this amount, each of ten regions is eligible for a base grant of \$3 million, except for the Tropical region which is eligible for \$1.5 million and the Gulf of Mexico region which is eligible for \$5 million (\$30.5). Additional funds are for operation of the national board (\$1 million) and equipment purchase (\$1.5).

For the purposes of defining marine regions established pursuant to section 404 of the bill, the following narrative description is provided.

(1) The Gulf of Maine Region, comprised of the marine and near-shore coastal waters off the States of Maine, New Hampshire and Massachusetts, including those waters north of a line extending 160 degrees from the point 42° 00' north latitude and 70° 01' west longitude; [i.e., Cape Cod]

(2) The Greater New York Bight Region, comprised of the marine and near-shore coastal waters off the States of Massachusetts, Rhode Island, Connecticut, New York, and New Jersey, including those waters extending southward from the boundary of the Gulf of Maine Region and northward of a line extending 90 degrees from the point 38° 56' north latitude and 74° 58' west longitude; [i.e., Cape May]

(3) The Mid-Atlantic Bight Region, comprised of the marine and near-shore coastal waters off the States of New Jersey, Delaware, Maryland, Virginia, and North Carolina, including those waters extending southward from the boundary of the Greater New York Bight Region and northward of a line extending 90 degrees from the point 34° 34' north latitude and 76° 34' west longitude; [i.e., Cape Lookout]

(4) The South Atlantic Bight Region, comprised of the marine and near-shore coastal waters off the States of North Carolina, South Carolina, Georgia, and Florida (Atlantic Coast), including those waters extending southward from the boundary of the Mid-Atlantic Bight Region and northward of a line extending 90 degrees from the point 24° 31' north latitude and 81° 48' west longitude [i.e., Key West], northward to the point 27° 30' north latitude

and 79° 20' west longitude and extending 90 degrees from the latter point;

(5) The Tropical Region, comprised of the marine and near-shore coastal waters off Puerto Rico and the United States Virgin Islands, including those waters extending southward from the boundary of the South Atlantic Bight Region;

(6) The Gulf of Mexico Region, comprised of the marine and near-shore coastal waters off the States of Florida (Gulf Coast), Alabama, Mississippi, Louisiana, and Texas;

(7) The Southern California Bight Region, comprised of the marine and near-shore coastal waters off the State of California, including those waters southward of a line extending 270 degrees from the point 38° 4' north latitude and 122° 48' west longitude [i.e., Point Reyes] and northward of a line extending 215 degrees from the point 32° 33' north latitude and 117° 10' west longitude; [i.e., U.S.-Mexican border]

(8) The North Pacific Region, comprised of the marine and near-shore coastal waters off the States of California, Oregon, and Washington, including those waters northward of the boundary of the Southern California Bight Region and southward of a line extending 290 degrees from the point 49° 0' north latitude and 122° 44' west longitude; [the international boundary demarking the Strait of Juan De Fuca]

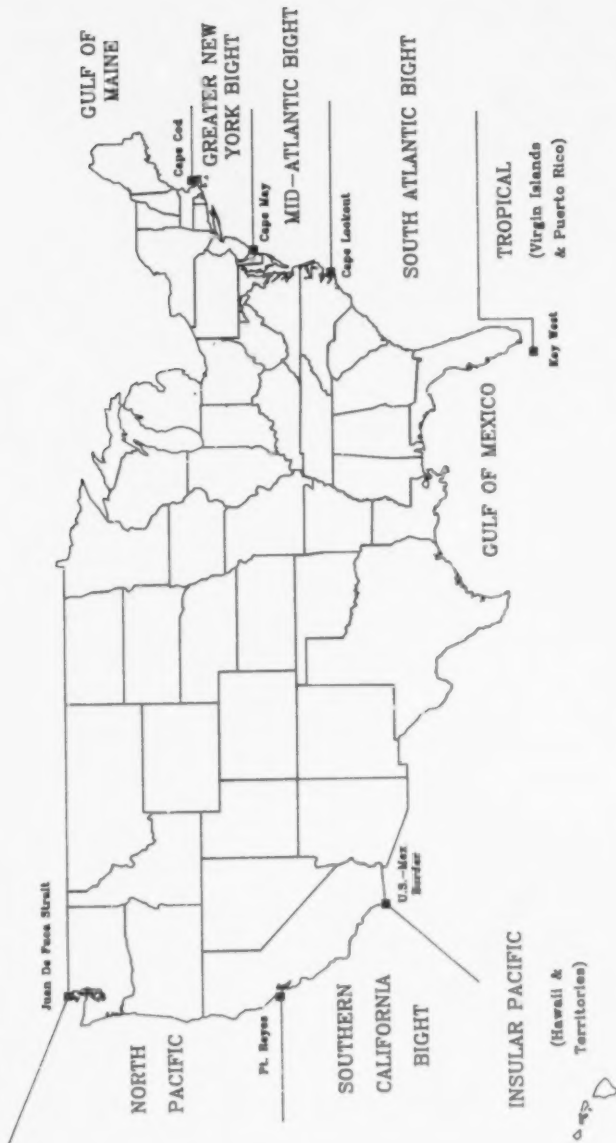
(9) The Gulf of Alaska and Arctic Seas Region, comprised of the marine and near-shore coastal waters off the State of Alaska; and

(10) The Insular Pacific Region, comprised of the marine and near-shore coastal waters off the State of Hawaii and including the waters of the Pacific Trust Territories.

MARINE RESEARCH REGIONS



GULF OF
ALASKA
AND
ARCTIC SEAS



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VI. ROLLCALL VOTES

Section 7(b) of Rule XXVI of the Standing Rules of the Senate and the rules of the Committee on Environment and Public Works require that any rollcall votes taken during the consideration of this bill be announced in this report.

On June 21, 1988, the Subcommittee on Environmental Protection met to mark-up the bill. The Committee approved an amendment in the nature of a substitute and approved the bill as amended by a rollcall vote of 8-0, Senators Mitchell, Chafee, Stafford, Baucus, Breaux, Graham, Lautenberg, and Moynihan voting.

On June 23rd, the full Committee on Environment and Public Works met to consider the bill as reported by the Subcommittee on Environmental Protection. The Committee voted to approve the bill as amended by unanimous voice vote.

VII. REGULATORY IMPACT

In compliance with section 11(b) of Rule XXVI of the Standing Rules of the Senate, the Committee makes the following evaluation of the regulatory impact of the reported bill. It is not expected that there will be any new regulatory burdens created by the reported bill.

VIII. COST OF LEGISLATION

Section 403 of the Congressional Budget and Impoundment Control Act requires that each bill contain a statement of the cost of such bill prepared by the Congressional Budget Office. That report follows:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, June 29, 1988.

HON. QUENTIN N. BURDICK,
Chairman, Committee on Environment and Public Works, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the attached cost estimate for S. 2068, the Marine Research Act of 1988.

If you wish further details on this estimate, we will be pleased to provide them.

Sincerely,

JAMES L. BLUM,
Acting Director.

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

1. Bill number: S. 2068
2. Bill title: The Marine Research Act of 1988
3. Bill status: As ordered reported by the Senate Committee on Environment and Public Works, June 23, 1988.
4. Bill purpose: S. 2068 would authorize the establishment of ten marine research centers in coastal areas of the United States. These programs would be funded by grants from the National Oceanic and Atmospheric Administration (NOAA), for which the bill would authorize the appropriation of \$33 million annually from the

Marine Research Trust Fund. Of the amount authorized, \$1 million would be for a Regional Marine Research Oversight Board headed by NOAA. The Marine Research Trust Fund would be created by other legislation.

5. Estimated cost to the Federal Government:

[By fiscal year, in millions of dollars]

	1989	1990	1991	1992	1993
Authorization level.....	33	33	33	33	33
Estimated outlays.....	22	31	33	33	33

The costs of this bill are in budget function 300.

Basis of estimate: This estimate assumes the full amounts authorized would be appropriated for each fiscal year. The estimated outlays are based on spending patterns for similar programs within NOAA.

6. Estimated cost to State and local governments: Although state and local government agencies would be involved in the operation of the research centers, CBO does not expect that enacting S. 2068 would result in any significant costs to state or local governments.

7. Estimate comparison: None.

8. Previous CBO estimate: None.

9. Estimate prepared by: Michael Sieverts.

10. Estimate approved by: C.G. Nuckols (for James L. Blum, Assistant Director for Budget Analysis).

X. S. 2068 AS REPORTED

A BILL To amend the Marine Protection, Research and Sanctuaries Act to protect marine and near-shore coastal waters through establishment of regional marine research centers

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE AND TABLE OF CONTENTS

SECTION 1. (a) TITLE.—This Act may be cited as the “Marine Research Act of 1988”.

(b) TABLE OF CONTENTS.—

- Sec. 401. Findings.
- Sec. 402. Purpose.
- Sec. 403. Definitions.
- Sec. 404. General authority.
- Sec. 405. Regional research plans.
- Sec. 406. Research, support, and equipment grants.
- Sec. 407. Monitoring and regional assessment.
- Sec. 408. Regional Marine Research Oversight Board.
- Sec. 409. Authorizations.

AMENDMENTS TO THE MARINE PROTECTION, RESEARCH, AND
SANCTUARIES ACT

SEC. 2. AMENDMENT.—The Marine Protection, Research, and Sanctuaries Act is amended by adding at the end thereof the following new title:

"TITLE IV—REGIONAL MARINE RESEARCH PROGRAMS

"FINDINGS

"SEC. 401. FINDINGS.—The Congress finds that—

"(a) the Nation's marine and coastal waters are a resource of tremendous value;

"(b) marine and coastal waters, including estuaries, are vital and productive natural ecosystems;

"(c) marine and coastal waters support commercial fisheries with an estimated value of over \$5,500,000,000 per year, and recreational fisheries with an estimated value of over \$7,500,000,000 per year;

"(d) marine and coastal waters support extensive recreational activities and related support services;

"(e) maintenance and protection of the environmental quality of the Nation's marine and coastal waters is essential to the commercial and recreational activities they support;

"(f) recent studies and reports provide evidence of growing threats to the environmental quality and ecological integrity of marine and coastal waters;

"(g) a report by the Congressional Office of Technology Assessment found that the overall health of marine and coastal waters is declining or threatened;

"(h) studies by the Environmental Protection Agency and the National Oceanic and Atmospheric Administration have identified unexpectedly high levels of contaminants in a number of coastal waters and sediments;

"(i) expanded and improved research and monitoring of marine and coastal waters is needed to gain a more complete understanding of these ecosystems, how they function naturally, and how human activities may be affecting them;

"(j) ongoing changes in world climate will alter regional weather and oceanic processes in ways which will affect the distribution and abundance of marine organisms;

"(k) there is a need to develop marine and coastal research programs which take a comprehensive approach to marine ecosystems in the various coastal and marine regions of the Nation;

"(l) there is a need to improve the extent of coordination among various marine and coastal research activities at the regional level and provide for long-range planning of research and related projects;

"(m) significant improvements in marine and coastal research can be accomplished through expansion and support of research at the regional level;

"(n) there is a need for sufficient and sustained Federal support for research and monitoring to protect the Nation's marine and coastal environment;

"(o) there is a need for comprehensive and periodic reports to the Congress on conditions and trends in marine and coastal environmental quality, research needs, and response programs; and

"(p) the results of marine and coastal research are valuable to developing and implementing marine and coastal environmental protection programs at the Federal, State, regional, and local levels.

"PURPOSE

"SEC. 402. The purposes of this title are to—

"(a) establish regional marine research programs to protect the Nation's marine and coastal environment;

"(b) provide sufficient and sustained funding for these regional programs to develop comprehensive, long-range research plans, and coordinate and support marine and coastal research and related activities;

"(c) establish within the Federal Government the capability to provide effective oversight of regional marine research; and

"(d) provide for periodic, comprehensive reports to Congress concerning conditions, trends, research needs, and response programs in the Nation's marine environment.

"DEFINITIONS

"SEC. 403. For purposes of this title—

"(a) the term 'Board' means the Regional Marine Research Oversight Board established pursuant to section 408 of this title;

"(b) the term 'region' means a Marine Research Region designated in section 404(f) of this title;

"(c) the term 'Federal agency' means any department, agency, or other instrumentality of the Federal Government, any independent agency or establishment of the Federal Government including any Government corporation;

"(d) the term 'State' means a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Trust Territory of the Pacific Islands;

"(e) the term 'marine and coastal waters' means all waters seaward of the head of tide, including estuaries, near-shore coastal waters, and off-shore waters;

"(f) the term 'local government' means any city, town, borough, county, parish, district, or other public body which is a political subdivision of a State and which is created pursuant to State law; and

"(g) the term 'nonprofit organization' means any organization, association, or institution described in section 501(c)(3) of the Internal Revenue Code of 1954 which is exempt from taxation pursuant to the provisions of section 501(a) of such Code.

"REGIONAL MARINE RESEARCH PROGRAMS

"SEC. 404. (a) GENERAL AUTHORITY.—There is authorized to be established within each region, as defined under subsection (f), a regional marine research program.

"(b) PURPOSES.—Regional marine research programs established pursuant to this section are intended to—

"(1) set overall goals for an integrated, long-term program of research and monitoring of marine and coastal environmental quality in the region;

"(2) develop comprehensive, long-range plans which identify the specific needs and priorities of research and monitoring activities and projects;

"(3) assure coordination of research among State agencies and other organizations involved in marine research in the region;

"(4) monitor environmental quality conditions of marine and coastal waters and assess the impacts of proposed activities in these waters;

"(5) provide a forum for review and comment on research plans from affected user and interest groups, such as commercial fishermen, other marine industries, and environmental organizations; and

"(6) provide a forum for coordinating research among research institutions, with other regions and with neighboring countries; and

"(7) make public reports on the environmental quality conditions in the region; analyze and interpret research data and information at the request of the relevant State and local agencies in the region for their application in environmental protection programs; and make such scientific recommendations to local, State, and Federal agencies on design of effective programs to address identified problems as may be necessary.

"(c) **AUTHORITIES.**—Each regional marine research program shall be authorized to—

"(1) support basic and applied research, investigations, monitoring, and assessment activities through its member organizations and agencies in the estuarine, coastal, and offshore environments of the region;

"(2) cooperate with Federal agencies, with States and with local government entities, interstate and regional agencies, other public agencies and authorities, nonprofit institutions and organizations, or other persons, in the preparation and support of marine research in the region;

"(3) enter into contracts, cooperative agreements or grants to member organizations, and to other State and local governmental entities, other public agencies or institutions, and nonprofit institutions and organizations for purposes of carrying out the provisions of this Act;

"(4) collect and make available through publications and other appropriate means, the results of, and other information pertaining to, the research conducted in the region;

"(5) support development of effective and practical methods and techniques for the detection and assessment of contamination in the marine environment;

"(6) hire staff and equip them as may be necessary to carry out the provisions of this Act, including the ownership and operation of research vessels and construction of necessary vessel-related support structures;

"(7) call conferences on regional marine research and assessment issues, giving opportunity for interested persons to be heard and present papers at such conferences;

"(8) support, in consultation with the Department of State, joint marine research projects with foreign nations;

"(9) utilize facilities and personnel of existing Federal agencies, including scientific laboratories and research facilities;

"(10) accept, and for all general purposes of this Act, utilize funds from other sources, including but not limited to State and local funds, university funds, and donations;

"(11) accept donations of equipment if such equipment benefits regional marine research programs, with appropriate tax deductions available; and

"(12) acquire secret processes, inventions, patent applications, patents, licenses, and property rights, by purchase, license, lease, or donation.

"(d) AREAS OF INVESTIGATION.—In carrying out the purposes and authorities of this section, regional research programs may support or assist research, investigations, studies, surveys, or demonstrations with respect to, but not limited to—

"(1) baseline assessment of marine environmental quality, including chemical, physical, and biological indicators of environmental quality;

"(2) basic oceanographic and biological conditions and processes;

"(3) effects or potential effects of contaminants, including nutrients, toxic chemicals and heavy metals, on the environment, including marine and aquatic organisms;

"(4) effects of modification of habitats, including coastal wetlands, seagrass beds and reefs, on the environment, including marine organisms;

"(5) inventory of pollutant sources and pollutant discharges into the coastal environment;

"(6) transport, dispersion, transformation, and fate and effect of contaminants in the marine environment;

"(7) marine and estuarine habitat assessment, protection, and restoration;

"(8) methods and techniques for modeling environmental quality conditions and trends;

"(9) methods and techniques for sampling of water, sediment, marine and aquatic organisms, and demonstration of such methods and techniques;

"(10) the effects on human health and the environment of contaminants or combinations of contaminants at various levels, whether natural or anthropogenic, that are found in the environment;

"(11) assessment of potential effects of major coastal and off-shore development projects in the region;

"(12) assessment and monitoring of the effects of climate change on marine resources in the region; and

"(13) analysis and interpretation of research data for the benefit of State and local environmental protection and resource management agencies in the region.

"(e) CREATION OF REGIONAL PROGRAMS.—(1) The Governors of a majority of the States in a region, as defined in subsection (f), may submit for approval to the Regional Marine Research Oversight Board a combined, interstate proposal for a regional marine research program.

"(2) Proposals for establishment of a regional marine research program shall—

"(A) identify the goals and objectives of the program;

"(B) identify the organizational structure and operating procedures of the program;

"(C) identify the research organizations within the region that will participate in the program, including State agencies, research laboratories and organizations (including marine research laboratories and organizations operated within the region by Federal agencies and national laboratories with marine research programs), academic institutions, and others;

"(D) identify the research capabilities and experience of the member organizations and how such capabilities and experience will be coordinated and maintained; and

"(E) provide for a Board of Directors, which shall include at all times not less than one member who is a Director of a Sea Grant Program of a State in the region, to oversee the administration and management of the regional research program;

"(F) provide for the position of Executive Director of the regional research program who shall administer and manage the program;

"(G) provide for professional and administrative staff support as needed to carry out the authorities, goals and objectives of the regional research program;

"(H) to the fullest extent practicable, make use of existing administrative and related resources and facilities, including the resources and facilities of the Sea Grant Program, in order to assure the most cost-effective management and implementation of the authorities and activities of the research program; and

"(I) provide for a Research Advisory Group, to include representatives from affected user and interest groups, including the commercial fishing industry, other marine industries, and environmental organizations, to advise the Board of Directors in the conduct of authorized activities.

"(3) Proposals for a regional marine research program shall be developed by a Regional Marine Research Organizing Committee which shall consist of the Director of the Sea Grant Program in each State in the region. The Organizing Committee shall coordinate and consult with agencies, institutions, and organizations which are expected to participate in the research program and with interest groups expected to participate in the Research Advisory Group in the development of the proposal.

"(4) Within ninety days of receipt of a proposal, the Board shall hold a public hearing in the region to hear comments on the proposal.

"(5) Within one hundred and eighty days after receipt of a proposal, the Board shall approve or disapprove the proposal on consideration of the following criteria—

"(A) inclusion as participating members of the program or other provision or mechanism for full coordination and cooperation with appropriate State agencies, marine research organizations or institutions, relevant national laboratories, and universities with marine programs in the region;

"(B) demonstrated capability in sufficient disciplines to successfully mount a multidisciplinary research program;

"(C) sufficient resources, including laboratory, library, computer, and support facilities;

"(D) a commitment from the member institutions to the support and participate in the regional marine research program; and

"(E) establishment of an Advisory Group pursuant to paragraph (2)(I), and commitment to adequate procedures for effective consultation with such group.

"(6) In the case of disapproval of a proposal, the Board shall notify the Governors of the submitting States in writing, stating in detail the revisions or modifications necessary to obtain approval of the proposal. The Governors of the interested States may, not later than ninety days following such notification, submit such revisions and modifications as they deem appropriate. The Board shall approve or disapprove the revised proposal within ninety days of receipt.

"(f) MARINE RESEARCH REGIONS.—For purposes of this Act, marine research regions are defined as follows:

"(1) Gulf of Maine region, comprised of the marine and near-shore coastal waters off the States of Maine, New Hampshire, and Massachusetts (north of Cape Cod);

"(2) greater New York bight region, from south of Cape Cod to Cape May, comprised of the marine and coastal waters off the States of Massachusetts, Rhode Island, Connecticut, New York, and New Jersey;

"(3) mid-Atlantic region, from Cape May, New Jersey, to Cape Lookout, comprised of the marine and coastal waters off the States of New Jersey, Delaware, Maryland, Virginia, and North Carolina;

"(4) South Atlantic bight region, from Cape Lookout to the Florida Keys, comprised of the marine and coastal waters off the States of North Carolina, South Carolina, Georgia, and Florida (Atlantic coast);

"(5) tropical region, comprised of the marine and coastal waters off Puerto Rico and the United States Virgin Islands (and to provide for broader international research coordination, representatives from the nations of the Caribbean region may serve as ex officio members of the program of this region);

"(6) Gulf of Mexico region, comprised of the marine and coastal waters off the States of Florida (Gulf coast), Alabama, Mississippi, Louisiana, and Texas;

"(7) California region, comprised of the marine and coastal waters off the State of California from Point Reyes south;

"(8) North Pacific region, from Point Reyes to the Canadian border, comprised of the marine and coastal waters off the States of California, Oregon, and Washington;

"(9) Gulf of Alaska, Bering and Arctic Seas region, comprised of the marine and near-shore coastal waters off the State of Alaska; and

"(10) insular Pacific region, comprised of the marine and coastal waters off the State of Hawaii, Guam, American Samoa, and the Northern Mariana Islands.

"REGIONAL RESEARCH PLANS

"SEC. 405. (a) REGIONAL RESEARCH PLANS.—(1) Each regional marine research program, approved under section 404 shall develop a three-year marine research and assessment plan for the region.

"(2) In development of research plans, the Board of Directors of the regional research program shall review and consider findings and recommendations of the national plan developed pursuant to the National Ocean Pollution Planning Act of 1978.

"(b) CONTENTS OF PLAN.—Such marine research plan shall include—

"(1) an overview of the environmental quality conditions in the near-shore coastal and marine waters of the region and expected trends in these conditions;

"(2) a description of the research and assessment needs, goals, and priorities in the region over the upcoming ten-year period with emphasis on the upcoming three-to-five year period;

"(3) a comprehensive inventory and description of all federally funded marine research and assessment activities expected to be conducted in the region during the three-year term of the research plan, including, but not limited to, projects funded under—

"(A) this Act;

"(B) the National Sea Grant Program;

"(C) section 320 of the Federal Water Pollution Control Act as amended;

"(D) the Fish and Wildlife Act of 1956; and

"(E) the Magnuson Fishery Conservation and Management Act of 1976.

"(4) an inventory and description of other research and assessment projects expected to be funded by public and private research organizations in the region;

"(5) a general description of research and assessment projects, including monitoring and assessment activities pursuant to section 407(a)(1), to be given priority for funding under section 406 of this Act in the three-year period covered by the plan, including the objectives of such projects and the approximate schedule, funding level, and products of such projects.

"(6) to the extent practicable, review of research and assessment projects which are addressing issues common to neighboring regions and discussion of coordination of these projects; and

"(7) an inventory of supplies and equipment used commonly for research projects in the region.

"(c) PLAN REVIEW AND APPROVAL.—(1) The research plan shall be submitted by the Board of Directors of the regional program to the

Regional Marine Research Oversight Board for review and approval.

"(2) The Research Advisory Group established pursuant to section 404(e)(2)(I) shall have an opportunity to review and comment on the research plan.

"(3) In review of research plans, the Board shall consider the degree to which the plan addresses the elements identified in subsection (b) of this section, any comments of the Research Advisory Group, and the past performance of the regional program in implementation of previous plans.

"(4) The Board shall approve or disapprove the research plan within one hundred and twenty days of receipt.

"(5) In the case of disapproval of a research plan, the Board shall notify the Board of Directors in writing, stating in detail the revisions or modifications necessary to obtain approval of the plan. The Board of Directors shall, not later than ninety days after such notification, submit such revisions and modifications as they deem appropriate. The Board shall approve or disapprove the revised plan within ninety days of receipt.

"(d) PLAN REVISION.—The research plan shall be revised and updated to reflect changing conditions every three years and resubmitted to the Board for review and approval under this section.

"RESEARCH, SUPPORT, AND EQUIPMENT GRANTS

"SEC. 406. (a) SUPPORT GRANTS.—(1) A regional marine research program for which a proposal has been approved pursuant to section 404, may submit to the Board an application for a support grant on an annual basis.

"(2) The application may provide for funding of basic functions of the program including—

"(A) cost of facilities, offices, and related equipment;

"(B) salaries and expenses of staff and other personnel services;

"(C) reasonable maintenance costs of equipment, including vessels, as determined by the Board; and

"(D) other overhead costs including costs of publications, development of research plans, and conduct of scientific and related meetings and seminars.

"(3) The application shall be for a period of a fiscal year and shall be in such form as may be required by the Board.

"(4) The Board shall approve or disapprove an application pursuant to this subsection within ninety days of receipt.

"(b) RESEARCH GRANTS.—(1) A regional marine research program for which a research plan has been approved pursuant to section 405 may submit to the Board an application for funding of research and assessment projects, in an amount to be specified by the Board and consistent with this Act, to support implementation of the approved research plan on an annual basis.

"(2) Organizations and agencies identified pursuant to section 404(e)(2)(C) may submit to the Board of Directors of the regional marine research program proposals for specific research and assessment projects.

"(3) Proposals submitted pursuant to paragraph (2) shall include—

"(A) identification of the responsible organization and principal investigator(s);

"(B) a budget statement and description of equipment needs;

"(C) a schedule of milestones, interim products, and final products;

"(D) a description of the final products of the research or assessment project;

"(E) a description of the relationship of the proposed project to the goals, objectives, and priorities of the research plan for the region and the relationship to other projects to be conducted in the region; and

"(F) any other information as may be required by the Board of Directors of the regional research program or the Regional Marine Research Oversight Board.

"(4) Proposals submitted pursuant to paragraph (2) shall be provided to the Regional Marine Research Oversight Board which shall provide for the peer review of each research or assessment project. Such peer review shall be conducted promptly and shall include review of each project by not less than two research scientists from a region other than the region in which the project is proposed. Findings of the peer review shall be provided to the Board of Directors of the regional research program submitting the proposal.

"(5) In selection of proposed projects for inclusion in the application for funding under this subsection, the Board of Directors shall consider—

"(A) the views and comments of the organizations and agencies identified pursuant to section 404(e)(2)(C);

"(B) the views and comments of the Research Advisory Group established pursuant to section 404(e)(2)(I);

"(C) the findings of the peer review process provided for in paragraph (4); and

"(D) the extent to which the proposed project is consistent with the goals, objectives, and priorities identified in the research plan.

"(6) Projects designed to extend beyond a one-year period shall include a full description of the entire project pursuant to paragraph (3) at the time of submittal and shall be reviewed pursuant to paragraph (4) subsequent to initial submittal only.

"(7) The Regional Marine Research Oversight Board shall review grant applications submitted pursuant to this section and shall approve or disapprove the application within ninety days of receipt.

"(c) EQUIPMENT SUPPORT.—(1) The Board of Directors of any research program with an approved research plan pursuant to section 405 of this Act may submit to the Board an application to purchase equipment necessary for the research provided for in the approved research plan and funded under subsection (b).

"(2) Equipment eligible for support under this section includes, but is not limited to—

"(A) monitoring and sampling equipment;

"(B) computer hardware or software;

"(C) scientific measurement and analytic equipment; and

"(D) necessary vessels and related support craft.

"(3) In review and approval of applications under subsection (2), the Board shall establish that there is—

"(A) a clearly demonstrated need for the equipment in the region to support identified research projects; and

"(B) adequate provision for maintenance and full utilization of the equipment, including loaning of equipment to organizations participating in another marine research center.

"(4) In review and approval of applications under paragraph (2)(D), the Board shall consult with the Federal Fleet Coordinating Council and the University Oceanographic Laboratory System (UNOLS) to determine the need for vessels or support craft.

"(5) The Board of Directors of each program shall hold title to equipment purchased pursuant to this section, shall report annually to the Board on the status and disposition of any equipment funded under this subsection, and shall give notice of ninety days prior to any sale or other disposition of such equipment.

"(d) REPORTING.—Any regional marine research program that receives a grant under subsection (b) of this section shall report to the Board not later than eighteen months after award of the grant on activities pursuant to this subsection. Such report shall include narrative summaries and technical data in such form as the Board may require.

"(e) MANAGEMENT.—For administrative purposes, grant funds pursuant to this section shall be managed by the National Oceanic and Atmospheric Administration.

"MONITORING AND REGIONAL ASSESSMENT

"SEC. 407. (a) MONITORING AND ASSESSMENT.—Each regional marine research program established in accordance with section 404 and receiving funds pursuant to sections 406 and 409 of this Act shall—

"(1) consistent with the research plan developed under section 405, support baseline monitoring of fundamental marine environmental conditions in the region, in accordance with criteria, measurement standards, and quality assurance techniques required by the Board; and

"(2) prepare periodic reports providing an assessment of the status of marine environmental quality and resources in the region.

"(b) REGIONAL MARINE ASSESSMENT REPORT.—(1) The regional marine assessment report mandated under this section shall—

"(A) provide an overview of environmental quality in the region using such information as is obtained pursuant to paragraph (1) of subsection (a) and such other information as is available;

"(B) describe trends in natural resource and environmental quality conditions;

"(C) summarize the findings and conclusions of projects of the research program and identify issues and research needs; and

"(D) provide recommendations for improvements in the design or implementation of Federal, State, or local programs for the protection of environmental quality in the region.

"(2) A draft of the regional marine assessment report shall be reviewed by the Research Advisory Group for their comments and input before final submission to the Board.

"(3) The regional marine assessment report shall be drafted in nontechnical style and shall be made available to the public, as well as to local, State, and Federal regulatory and management agencies. The regional marine assessment report shall be submitted to the Governors of each State in the region.

"(4) Reports under this subsection shall be submitted to the Board on a schedule to be determined by the Board. To the extent practicable, the Board shall provide for reports beginning three years after the date of establishment of each regional program and every three years thereafter.

"REGIONAL MARINE RESEARCH OVERSIGHT BOARD

"SEC. 408. (a) ESTABLISHMENT OF REGIONAL MARINE RESEARCH OVERSIGHT BOARD.—(1) There is authorized to be established a Regional Marine Research Oversight Board to oversee and coordinate the activities of the regional marine research programs authorized under section 404 of this Act.

"(2) The members of the Board shall be representatives of the following Federal agencies and institutions designated by the senior administrative official of each agency or institution—

"(A) the National Oceanic and Atmospheric Administration,

"(B) the Environmental Protection Agency,

"(C) the National Science Foundation,

"(D) the United States Fish and Wildlife Service,

"(E) the Minerals Management Service,

"(F) the United States Army Corps of Engineers,

"(G) the Department of Energy,

"(H) the United States Navy,

"(I) the United States Geological Survey, and

"(J) the National Academy of Science.

"(3) The representative of the National Oceanic and Atmospheric Administration shall serve as Chair of the Board.

"(4) The Board shall organize its internal structure and functions as it deems necessary to best fulfill its responsibilities.

"(b) FUNCTIONS AND AUTHORITIES.—(1) The Board shall be responsible for the following—

"(A) review and approval of proposals for regional marine research programs, including conducting a public hearing in the region, in accordance with the provisions of section 404;

"(B) review and approval of the three-year research plans submitted by regional marine research programs, in accordance with section 405; and

"(C) approval of grant applications from the regional marine research programs, in accordance with section 406.

"(2) The Board is authorized to—

"(A) hire professional and support staff to carry out the provisions of this section;

"(B) hire an Executive Director at the Senior Executive Service (SES) level;

"(C) expend funds authorized under subsection (d) as required to carry out the provisions of this section; and

"(D) make grants to the regional marine research programs, pursuant to sections 406 and 409 of this Act.

"(c) REPORT TO CONGRESS.—(1) The Board shall make periodic reports to Congress on the health of the Nation's marine and coastal waters, and on the research and assessment activities and accomplishments of the regional marine research programs.

"(2) Reports under this subsection shall be made within three years of the date of enactment and every three years thereafter.

"(d) FUNDING.—The activities of the Board shall be supported with funds available under section 409(b) of this Act.

"AUTHORIZATIONS

"SEC. 409. (a)(1) For the purpose of carrying out the activities authorized by sections 404, 405, 406, and 407 of this Act there are authorized to be appropriated from the Marine Research Trust Fund \$33,000,000 per year.

"(2) Such funds shall be allocated as follows—

"(A) for the costs of the Regional Marine Research Oversight Board established pursuant to section 408 of this Act, except that not more than \$1,000,000 shall be available for such purposes for any fiscal year;

"(B) for grants to regional marine research programs pursuant to section 406(a) of this Act, but only if such research program has submitted a proposal which has been approved pursuant to section 404 of this Act and each grant under this paragraph is not in excess of \$500,000 per fiscal year;

"(C) for grants to support implementation of the regional research plan developed pursuant to section 405 of this Act, including research projects pursuant to section 406(b) and regional monitoring and assessment activities pursuant to section 407, but only if a research plan has been approved pursuant to section 405(c) and the aggregate amounts of grants under paragraphs (B) and (C) of this subsection to any such program for any fiscal year do not exceed \$3,000,000, or \$1,500,000 in the case of the Tropical region defined by section 404(f)(5), or \$5,000,000 in the case of the Gulf of Mexico region defined by section 404(f)(6); and

"(D) for grants for the purchase of equipment under section 406(c) of this Act, to the extent of amounts in the Marine Research Fund which are not appropriated pursuant to paragraphs (A), (B), or (C).

"(3) In the event that funds available in the Marine Research Trust Fund are not sufficient to make grants in the full amounts provided for in this section, the Regional Marine Research Oversight Board shall give priority to grants pursuant to paragraph (A) of subsection (2); shall give second priority to grants pursuant to paragraph (B) of subsection (2); and shall make grants pursuant to paragraph (C) of subsection (2) available on a pro rated basis.

"(b) For the purpose of carrying out the activities authorized by section 408 of this Act there are authorized to be appropriated from the Marine Research Trust Fund pursuant to chapter 98, subchapter A, section 9511 of the United States Code, \$1,000,000 per fiscal year."

Amend the title so as to read: "A bill to amend the Marine Protection, Research, and Sanctuaries Act to protect marine and coastal waters through establishment of regional marine research programs."

XI. CHANGES IN EXISTING LAW

Section 12 of Rule XXVI of the Standing Rules of the Senate requires publication of any changes made in existing law by the reported bill. This bill makes no changes in existing law.

